

# STANCE FOR WWH-OCE WNTTE ZONE

JASIC( Japan)

**Prepared for 12th Plenary Meeting of the  
Off-Cycle Informal Working Group  
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# BACKGROUND

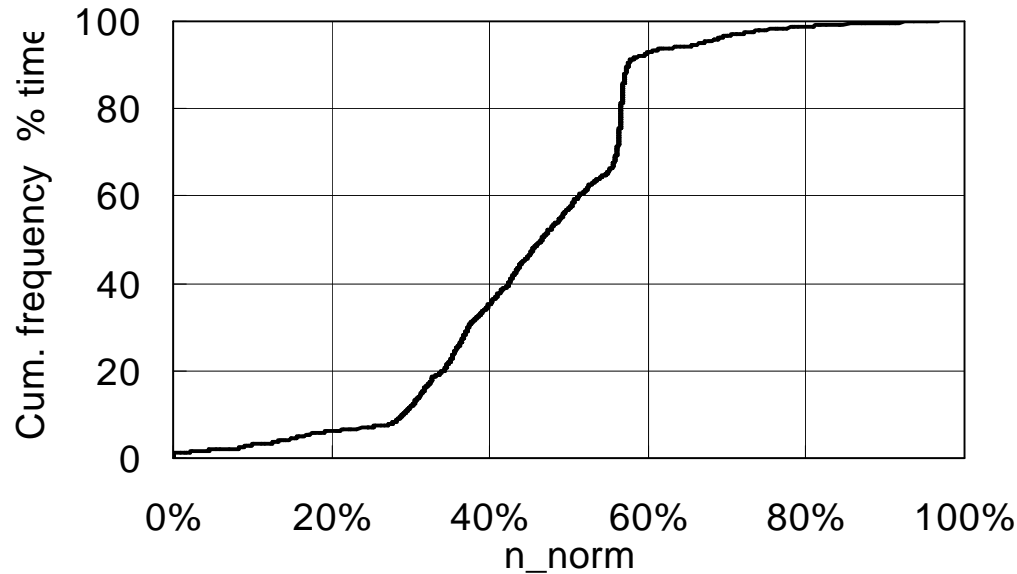
- At the Sept. WWH-OCE Chicago meeting JASIC requested to expand WNTE zone to low speed range, and the chairman requested to clarify WNTE minimum engine speed.
- JASIC original recommendation: Nlow defined in WHDC
- Chairman recommendation: 25% frequency speed accumulated in WHTC operation

# JASIC stance

- 13 Japanese trucks (including Heavy, Medium and Light-duty) are analyzed, both Nlow and 25% frequency speed are calculated.
- In most cases, the difference is small.
- It seems appropriate to adopt chairman's recommendation and adopt 25% frequency speed for WNTE minimum engine speed.

# Engine speed accumulation frequency

note: except idle and deceleration



$$n = n\_norm * (0,45 * n\_lo + 0,45 * n\_pref + 0,1 * n\_hi - n\_idle) * 2,0327 + n\_idle$$

N\_100%

Vehicle	0001	0004	0049	0051	0052	0002	0043	0044	0048 0054	0005	0041	0046	0053
GVW	5t	5t	5t	5t	5t	8t	8t	8t	8t	25t	25t	25t	25t
$1 - \frac{(N_{100\%} + n\_idle)}{\text{Rated speed}}$ %	8.6	5.6	5.7	4.8	12.6	6.2	4.6	7.5	5.9	8.0	-6.1	0.9	0.4

## Result of Calculated Engine Speed for 13 Vehicles

Vehicle	0001	0004	0049	0051	0052
n idle	580	650	650	650	580
Rated	3100	3000	3200	2700	3000
<b>NTE lo</b>	1859	1821	1906	1604	1902
<b>N low</b>	1560	1536	1623	1338	1631
<b>WHTC 25%</b>	1575	1549	1625	1428	1578
NTE lo/Rated	0.60	0.61	0.60	0.59	0.63
Nlow/Rated	0.50	0.51	0.51	0.50	0.54
WHTC 25%/Rated	0.51	0.52	0.51	0.53	0.53

Vehicle	0002	0043	0044	0048-0054
n idle	550	600	550	530
Rated	2900	2700	2700	2900
<b>NTE lo</b>	1725	1603	1600	1720
<b>N low</b>	1456	1362	1329	1472
<b>WHTC 25%</b>	1453	1394	1389	1437
NTE lo/Rated	0.59	0.59	0.59	0.59
Nlow/Rated	0.50	0.50	0.49	0.51
WHTC 25%/Rated	0.50	0.52	0.51	0.50

Vehicle	0005	0041	0046	0053
n idle	450	500	450	500
Rated	2200	2200	2100	1750
<b>NTE lo</b>	1320	1141	1163	1020
<b>N low</b>	1117	918	940	853
<b>WHTC 25%</b>	1137	1059	1045	949
NTE lo/Rated	0.60	0.52	0.55	0.58
Nlow/Rated	0.51	0.42	0.45	0.49
WHTC 25%/Rated	0.52	0.48	0.50	0.54

# An Example of Comparison

Vehicle 0001: GVW5t , Rated speed 3100rpm

note: Cumulative Frequency calculated except idle and deceleration

